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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,484	03/26/2004	Mitsuru Iwasaki	2004-0395A	8321

513 7590 12/10/2004

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EXAMINER

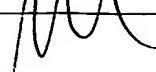
FLANIGAN, ALLEN J

ART UNIT PAPER NUMBER

3753

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/809,484	Applicant(s) IWASAKI ET AL. 	
	Examiner Allen J. Flanigan	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 refers to "tube thickness", but it is unclear whether the dimension referred to is the extent of the narrowest dimension of the tube (corresponding to the width of the tube receiving hole), or the thickness of the wall that forms the tubes. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moranne in view of Letrange et al.

Moranne shows a tube sheet ("tube end plate") for motor vehicle radiators with inclined or slanted wall portions extending between slots 11 and tube collars 9. The only claimed structure lacking is the corrugated fins; Moranne doubtless neglects to illustrate such a well-known feature for clarity. Letrange et al. shows that it is known in the art to provide such fins in between flat tubes in a radiator of the type shown in Moranne. Thus, it would have been obvious to one of ordinary skill in the art at the time the instant invention

was made to provide such a well-known feature in the heat exchanger of Moranne.

The recitation at the end of claim 1:

“wherein when said tubes have a thickness of 0.13 mm to 0.23 mm, a slant angle θ of the connection portions is: slant angle θ ($^{\circ}$) $\geq 25 \times$ (thickness (mm) of sheet plate) + (-125 x (thickness (mm) of tube) + 25)”

Is not considered to patentably distinguish. This is because the recitation is qualified with the term “when”. Such potential language is not seen to positively require the recitation which follows. As noted in ***In re Collier*, 158 U.S.P.Q. 266**,

“The main fault we observe . . . is indefiniteness in the sense that things which may be done are not required to be done. For example, the ferrule or connector member . . . becomes displaced *when* the ferrule is crimped but that may never be, so far as the language of claim 17 is concerned. These cannot be regarded as . . . positive limitations . . . They cannot therefore be relied on to distinguish from the prior art.”

Indeed, implicit in the recitation “when said tubes have a thickness of 0.13 mm to 0.23 mm . . .” is the situation where when the tubes have some other thickness, the slant angle of the connection portions may presumably be any angle. Thus, the claims only limit the slant angle when the tube thickness is within a certain range, and the claim never specifically limits this parameter to this range.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kato shows slanted connecting portions in a tube sheet that appear to define an angle of approximately 30 degrees (see Fig. 2). The preferred tube thickness and tube sheet thickness dimensions are 0.25-0.50mm and 0.8-1.2 mm, respectively. Note, however, that Haussmann shows that it is known to provide tube wall thickness of between 0.2 mm and 0.25 mm (lines 49-50 of column 3). The remaining patents show various tube sheet constructions with slanted wall portions adjacent the tube receiving holes/collars.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (571) 272-4910. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Allen J. Flanigan
Primary Examiner
Art Unit 3753

AJF